



1 gcgcccgcgc gaccgcgcgc ccagtcgccg cccgcgccg ctaaccgccc cagacacagc
61 gctcgccgag ggtcgcttgg accctgatct taccgtggg caccctgcgc tctgcctgcc
121 gcgaagaccg gctccccgac ccgcagaagt caggagagag ggtgaagcgg agcagcccga
181 ggcggggcag cctccccggag cagcgcgcgc cagagcccgg gacaatgggg ccgcggcggc
241 tgctgctggt ggccgcctgc ttcagtctgt gcggcccgcgt gttgtctgcc cgcacccggg
301 cccgcaggcc agaatcaaaa gcaacaaatg ccacctaga tccccggtca tttcttctca
361 ggaaccccaa tgataaatat gaaccatttt gggaggatga ggagaaaaat gaaagtgggt
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481 cattcatctc agaagatgcc tccggatatt tgaccagctc ctggctgaca ctctttgtcc
541 catctgtgta caccggagtg tttgtagtca gcctcccact aaacatcatg gccatcgtg
601 tgttcatcct gaaaatgaag gtcaagaagc cggcgggtgg gtacatgctg cacctggcca
661 cggcagatgt gctgtttgtg tctgtgctcc cctttaagat cagctattac tttccggca
721 gtgattggca gtttgggtct gaattgtgtc gcttcgtcac tgcagcattt tactgtaaca
781 tgtacgcctc tatcttgctc atgacagtca taagcattga ccggtttctg gctgtggtgt
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961 tgccggggct caacatcact acctgtcatg atgtgctcaa tgaaaccctg ctggaaggct
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1141 gcaagaagtc ccgggctttg ttcctgtcag ctgctgtttt ctgcatcttc atcatttgct
1201 tcggacccac aaacgtcctc ctgattgcgc attactcatt cctttctcac acttccacca
1261 cagaggctgc ctactttgcc taccctctct gtgtctgtgt cagcagcata agctcgtgca
1321 tcgacccctt aatttactat tacgcttctt ctgagtggca gaggtacgtc tacagtatct

Fig. 1A

1381 tatgctgcaa agaaagtcc gatcccagca gttataacag cagtgggcag ttgatggcaa
 1441 gtaaaatgga tacctgctct agtaacctga ataacagcat atacaaaaag ctgttaactt
 1501 aggaaaaggg actgctggga ggtaaaaag aaaagtatat aaagtgaat aacctgagga
 1561 ttctattagt cccacccaa actttattga ttcacctcct aaacaacag atgtacgact
 1621 tgcataacctg ctttttatgg gagctgtcaa gcatgtattt ttgtcaatta ccagaaagat
 1681 aacaggacga gatgacggtg ttattccaag ggaatattgc caatgctaca gtaataaatg
 1741 aatgtcactt ctggatatag ctaggtgaca tatacatact tacatgtgtg tataatgtaga
 1801 tgtatgcaca cacatatatt atttgcagt cagtatagaa taggcacttt aaacactct
 1861 ttccccgcac ccagcaatt atgaaaataa tctctgattc cctgatttaa tatgcaaaagt
 1921 ctaggttggt agagtttagc cctgaacatt tcatggtgtt catcaacagt gagagactcc
 1981 atagtttggg ctgtaccac ttttgcaaat aagtgtattt tgaattgtt tgacggcaag
 2041 gtttaagtta ttaagaggta agacttagta ctatctgtgc gtagaagtcc tagtgttttc
 2101 aattttaaac atatccaagt ttgaattcct aaaattatgg aaacagatga aaagcctctg
 2161 ttttgatatg ggtagtattt ttacattttt acacactgta cacataagcc aaactgagc
 2221 ataagtcctc tagtgaatgt aggctggctt tcagagtagg ctattcctga gagctgcatg
 2281 tgtccgcccc cgatggagga ctccaggcag cagacacatg ccaggggccat gtcagacaca
 2341 gattggccag aaaccttcct gctgagcctc acagcagtga gactggggcc actacatttg
 2401 ctccatccctc ctgggattgg ctgtgaactg atcatgttta tgagaaactg gcaaaagcaga
 2461 atgtgatatc ctaggaggta atgaccatga aagacttctc taccatctt aaaaacaacg
 2521 aaagaaggca tggacttctg gatgcccatc cactgggtgt aaacacatct agtagttgtt
 2581 ctgaaatgtc agttctgata tggaagcacc cattatgcgc tgtggccact ccaataggtg
 2641 ctgagtgtac agagtggaat aagacagaga cctgccctca agagcaaaagt agatcatgca

Fig. 1B

2701 tagagtgtga tgtatgtgta ataatatgt ttcacacaaa caaggcctgt cagctaaaga
2761 agtttgaaca tttgggttac tatttcttgt ggtataact taatgaaac aatgcagtac
2821 aggacataa ttttttaaaa taagtctgat ttaattgggc actatttatt tacaatgtt
2881 ttgctcaata gattgctcaa atcaggtttt cttttaagaa tcaatcatgt cagtctgctt
2941 agaaataaca gaagaaaata gaattgacat tgaatctag gaaaattatt ctataatttc
3001 cattactta agacttaatg agactttaaa agcatTTTT aacctcctaa gtatcaagta
3061 tagaaaatct tcatggaatt cacaagtaa ttgggaaatt aggttgaaac atatctctta
3121 tcttacgaaa aatggtagc attttaaca aatagaaag ttgcaaggca aatgtttatt
3181 taaaagagca ggccaggcgc ggtggctcac gctgtaatc ccagcacttt gggaggctga
3241 ggcgggtgga tcacgaggtc aggagatcga gaccatcctg gctaacacgg tgaaccctg
3301 ctctactaaa aatgcaaaaa aaattagccg ggcgtggtgg caggcacctg tagtcccagc
3361 tactcgggag gctgaggcag gagactggcg tgaaccagg aggcggacct tgtagtgagc
3421 cgagatcgcg cactgtgct ccagcctggg caacagagca agactccatc tcaaaaaaa

Fig. 1C

MGPRRLLLVAACFSLCGPLLSARTRARRPESKATNATLD
PRSFLLRNPNDKYEPFWEDEEEKNESGLTEYRLVSINKSS
PLQKQLPAFISEDASGYLTSSWLTFLVPSVYTG VFVWSL
PLNIMAIVVFILKMKVKKPAVVYMLHLATADVLFVSVLPFK
ISYYFSGSDWQFGSELCRFVTAAFYCNMYASILLMTVISI
DRFLAVVYPMQSLSWRTLGRASFTCLAIWALAIAGVVPL
VLKEQTIQVPGLNITTCHDVLNETLLEGYYAYYFSAFSAV
FFVPLIISTVCYVSIIRCLSSSAVANRSKKSRAFLSAAV
FCIFIICFGPTNVLLIAHYSFLSHTSTTEAAYFAYLLCVCVS
SISSCIDPLIYYYASSECCQRYVYSILCCKESSDPSSYNSS
GQLMASKMDTCSSNLNNSIYKKLLT

Fig. 1D

cctgcctgca cggcacagga gagcaaactt ctacagacag accaaggctt ccatttgctg 60
ctgacacatg gaactgaggt gaaattgtgc tccatgattt tacagatttc ataacgttta 120
agagacggga ctcaggtcat caaatgaaa gccctcatct ttgcagctgc tggcctcctg 180
cttctgttgc ccactttttg tcagagtggc atggaaaatg attcttttga agagttcccc 240
ccaaccttac ccattaagac ctttcgtgga gctcccccaa attcttttga agagttcccc 300
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caggaatatt atcttgttca gccagacatc accacctgcc atgatgttca caacacttgc 900
gagtcctcat ctcccctcca actctattac ttcatctcct tggcattctt tggattctta 960

Fig. 10A

attccatttg tgcttatcat ctactgctat gcagccatca tccggacact taatgcatac 1020
gatcatagat gggtgtggta tgттаaggcg agtctcctca tccttgtgat ttttaccatt 1080
tgctttgctc caagcaatat tattcttatt attcaccatg ctaactacta ctacaacaac 1140
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ttagatccat tcctttattt tctcatgtca aaaaccagaa atcactccac tgcttacctt 1260
acaaaatagt gaaatgatct tagagaacaa ggacagccat cacagagaac gtctgttttc 1320
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actttatcac ccagactggc gtgcagtggc actatcttgg ctcatctgcaa cctctgcctc 1500
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tcaagtgatc ttccggcctc agcctcccaa agtgctggat tacaggcgtg agccactgag 1680
ccagccagca ttagtaattt ttaaaaacac tttatcagta ttttaaaaat gttaatgcag 1740
gagaaaagat atcacaactc tatggaaaat gacattttcca tttgccttat tgctacttca 1800
agctctttaa atcaccatct tccctatttc 1830

Fig. 10B

1 ctcccacggg ctggctggca agcggccctg gtgggtctgc gggggcaggg gcagcctcc
61 tggtttatct ccaccggcgc gatctgctcg tccgcctcgg ctccagaagc tggggctcag
121 ggtccggcga ggcaggaagc ctgaggccac agcccagagc agcctgagtg cagtcatgtg
181 ggggcgactg ctctgtggc cctgtgtgt ggggttcagc ctgtctggcg gcaccagac
241 cccagcgtc tacgacgaga gcgggagcac cggagggtgt gatgacagca cgccctcaat
301 cctgccctgcc cccgcgggt acccaggcca agtctgtgcc aatgacagtg acaccctgga
361 gctcccggac agctcacggg cactgtctt gggctgggtg cccaccaggc tggtgcccgc
421 cctctatggg ctggtccctg tggtggggt gccggccaat gggctggcgc tgtgggtgct
481 ggccacgcag gcacctcggc tgcctccac catgtgctg atgaacctcg cgactgctga
541 cctcctgtcg gccctggcgc tgcctccgcg gatcgccctac cactgctg gccagcgctg
601 gcccttcggg gaggcgcct gccgcctggc cagggccgca ctctatggtc acatgtatgg
661 ctcatgtctg ctgtggccg ccgtcagcct ggatcgctac ctggccctgg tgcacctgct
721 gcggggccgc gccctgctg gccgggcct ggcccttga ctctgcatgg ctgttggct
781 catggcgcc gccctggcac tgcctctgac actgcagcgg cagacctcc ggctggcgcg
841 ctccgatcg gtgtctctgc atgacgcgt gccctggac gcacaggcct cccactggca
901 accggccttc acctgccctg cgctgttggg ctgtttcctg cccctgctgg ccatgtctct
961 gtgtacggg gccacctgc acacgcctgg gccagcggc cggcgctacg gccacgcgct
1021 gaggtgacc gcagtgggtg tggcctccg cgtggccttc ttcgtgccca gcaacctgct
1081 gctgtgtctg cattactcgg acccgagccc cagcgccctg ggcaacctct atggtgccta
1141 cgtgccagc ctggcgctga gcacctcaa cagtgcgtg gatcccttca tctactata

Fig. 11A

1201 cgtgtcggcc gagttcaggg acaagggtgcg ggcagggctc ttccaacggt cgccggggga
1261 caccgtggcc tccaaggcct ctgcggaagg gggcagccgg ggcattggga cccactctc
1321 ttgtctccag tgacacaaag tggggaaggc tgtactgggt cgaacagggt ccttcccc
1381 acttcacgtc cttctggga cctcagaatg tgacctatt tggaatagg gttgttaca
1441 ctgtcactag cggagggtcac ttgggagaag ggtgggccc acatccagtg tgggtggtgt
1501 cctcataaga taaggagagg ccaggccctg tggctcacgc ctgtaatccc agcactttaa
1561 gagccaagg cggatggatc acttgagccc aggagtcaa caccagcctg agcaacatgg
1621 taaaacccca tctctacca aaatacaaaa attagctggg ctgggtggct ggcgcctgta
1681 atcccagcta ctcaggagac tgaggcagaa ggtcgcctg aacctgggag gcagagggtg
1741 cagttagccg agattgcgc actggactcc agcctgcctg acagagagcc tgtctctaaa
1801 ttaattaatt aattaatta attcaattt aaaaagacga aaagtgcagg ccagggtgcag
1861 tggctcacgc ctataatctc agcactctg gagccaaga tggaggattg ctggaagcca
1921 ggagtttggg accagccctg gcaacatagg gggatcccat ctctacacac aaaaaattt
1981 ttaataaac caggcatgtt ggcctgcgc tatagtcca gccactcaag aggcacaggc
2041 gggaggatca ctgagccctg ggaggttctg gttgcagtga gctatgattg taccactgca
2101 ctccagccctg ggcaacagag caagaccctg tctcaaaaat aaacaaacta aaattaaaa
2161 aagaagacga gagatagtgg gtgtgggtgg tcacaccctg aatcccagca ctttgggaagg
2221 ccgagggtggg cagatcatct gaggccagga gttcaagacc agcctggcta acatggtgaa

Fig. 11B

2281 atcctatctc taccaaaat acaaaaatta gccaggcgtg gtggtgggca cctgtactgg
2341 ggagggtgcc accagctac tggggaggct gattcaggag aatcgctga acctgggagg
2401 cggaggttgc ggtcagctga gatggtgcc ctcactcca gcctgggcga aagagcgact
2461 ctgtctccaa aaaaagaga agaggagagg acacagagac acacagagaa gaaagccatg
2521 tggcggcaga ggcagagatg ggagtgatgc ggacggacac aaactaaggg atgccacgat
2581 gccaagcaca gccaacagcc accagcagcc aggagacagg cctgggacgg gctctccctc
2641 acagcctcca gaggaacca gccctgccac cacctlgacc ctggacttct ggccctgcaga
2701 actgtgagac aataaactct cattgttta agctgccctg catgtggcac ttgtcaggg
2761 cagcccagga atctgaaaca ggalcaaat ctgtctcctg ggcccctgcc gcatctctgg
2821 ctcggttctc tgggctggat gcagcccacg acgcactggt gctgagatg gggctggagc
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2941 caccocatcc tcagtgccca atgctgtggc ccaccaggc ccagagccctg gttggccatt
3001 ctcatgccc aagcttctg gctttgggat gtctcttgag caaccagaat agcaccacca
3061 actctgctcc ccaaaaccca tcactagcac ggctcagcct cctgctatcc cctgactgct
3121 ggggaccctc gccttccctc ctctcaccctg caggctgac ctcttttca ctctctgtca
3181 atgtcaccag ggataagggt ggacaatggg ggggtgggggt ggacagtggt tgcctggggg
3241 ttgggtgtct gcagaccctg aactcccttc tgcaggatg ttggcagccg gttgtaagcc
3301 ttgcacggga cagaccacac ccaccgcaac ctcatccct cagcactaac cacatccact

Fig. 11C

3361 ctcaaccccg tccctctgc actgaccaca cccacccgt tcgccccgc ccccgcaact
3421 gaacactccc gccctcaacc cgcaccctc cgcactcacc tccccctgc cgctcgaccc
3481 cgccctcacc acactgacca cctcaaccc attgcgcca gtccccacca cagtgaccac
3541 accctcactg gctcgggcct gccccagta tactgaccat tccccagcca ctcccttcc
3601 gcacttacca ctcccccagc cagccccct cccgctgacc gctcctccag ccccgccctc
3661 cccgtacagg cagagcgccc gccaccctt atgctgcgtt ctctgactt tacgttggcc
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3841 gcgcgctcca ctctgtga cgcgggtccg gcgcacagtt cccgggcgag tgggctgtgc
3901 gtgctgacgt ttagaagcg agtggcctcg aaggctacgg gacgagggtg gcgggtgacc
3961 aagtgaggc gcgacgggtc agggaccggg ccgggccggg ggtgcggcg cgcgggccta
4021 ccgggttcgt agtagctga caggagact ggacgcggc acgtcctgcc caccgcac
4081 tcccgagag cacggaaccg cagcacgtc aggcaccggc tggggatctg tggggcagcg
4141 gcgggcgag gctcgaccg ggccaggagg ccggggcgcg tgagctcagg ccagaactg
4201 gctgatttca gggataccca ggacgcgtga aacacagaag aaacgtgac ccattttctt
4261 tttttttt actttttt tttttttt ttctgagac agagtctcgc gctgttgccc
4321 aggcaggagt gcagtggcgt gatctggct cactgcaagc tcggcctcct gggttcaaat
4381 gattctctg cctcagcctc ccaagtagct ggataacag gcgccacca ccgcaccctg

Fig. 11D

4441 ctaattttt gtattttga tcaagacgga gttcaccat gttggccagg ctggtctcca
4501 actcctgccc tcaagtgatc cgccctgggc ccaatttta ttcttgggt ccttccatcc
4561 cactgggaaa acgtctcagg tggcctctga aacaccactc cttttgtgt gtgtgcacgc
4621 atggctgagc atgtgtgggt gggagtcagc acattcacga tacigtgcaa tcatcacctc
4681 tgtctagtta caggacgggt tcttctccc ccaagaacac cccatcgcca tcagcactca
4741 clccccactc cccagcccc tggcaaccac aaatcttcc aactctacgg attgacctgt
4801 tctgggcatt tcatgtcaat ggaatcatgt actctgtgaa aaaaaaaaaa aaaaaaaa
4861 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaa

Fig. 11E

MWGRLLWPLVLGFSLSGGTQTPSVYDESGSTGGDDSTPSILP
APRGYPGQVCANDSDTLELPDSSRALLLGWVPTRLVPALYGLVLVGLPANGLALWVL
ATQAPRLPSTMLLMNLATADLLALALPPRIAYHLRGQRWPFGEAACRLATAALYGHM
YGSVLLAAVSLDRYLALVHPLRARALRRRLALGLCMAAWLMAAALALPLTLQRQTF
RLARSDRVLCHDALPLDAQASHWQPAFTCLALLGCFLPLLAMLLCYGATLHTLAASGR
RYGHALRLTAVVLASAVAFFVPSNLLLLLHYSDPSPAAGNLYGAYVPSLALSTLNSC
VDPFIYYVSAEFRDKVRAGLFQRSPGDTVASKASAEGGSRGMGTHSSLLQ

Fig. 11F